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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/457,816	12/09/99	SCHULZ	K S01.12-0517

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WM21/0629

EXAMINER

MILLER, B

ART UNIT	PAPER NUMBER
2652	3

DATE MAILED: 06/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/457,816

Applicant(s)

SCHULZ ET AL.

Examiner

Brian E. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 09 December 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

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Claims 1-20 are pending.

Drawings

1. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claims 4-5 are objected to because of the following informalities: (a) between "crystal has" the word --substrate-- such be inserted. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 13-15, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 13, the language "A suspension assembly comprising a transducer head supported on an adjustable arm and a flexible circuit of claim 1" is indefinite. None of the above elements are recited in claim 1. Furthermore, it is not readily apparent whether the claim is dependent from

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claim 1 or actually is an independent claim. For this examination, claims 13-15 are considered to be dependent from 1, either directly or indirectly;

(b) Claim 14, considered to be dependent from 13, however, should be amended to read "The disc drive of claim 13...", to be consistent with standard claim terminology;

(c) claim 20, the meets and bounds of the claim cannot be readily ascertained. It is not readily apparent how a "method of making a disc drive" is commensurate with a "method for producing a flexible circuit (re claim 16).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. Claim 1, 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Boutaghou (US 5,796,556). Boutaghou discloses a suspension assembly for use in a magnetic disk drive apparatus (see col. 1, lines 10-15); the disk drive further including: a selection means for positioning a transducer (not shown; E-block arm); a conducting means 20 for providing electrical connection between the transducer and an external circuit; flexible circuit 14; transducer 28; and a magnetic disk 32 (see FIG. 3).

8. Claims 1-3, 6, 11-16, 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Himes et al (US 6,046,886). Himes et al discloses a suspension/flexible circuit assembly for use

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in a disk drive (FIG. 1); the flexible circuit includes a base dielectric layer 28; conductor layer 30 and a cover dielectric layer 32 (see FIG. 2). The base dielectric may be of polyester and/or a liquid crystal polymer (LCP) (see col. 5, lines 5-7). It is inherent that an LCP material has thermoplastic characteristics.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-5, 7-10, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Himes et al in view of Lambert (US 5,795,162). For a description of Himes, see the rejection, supra. Himes is silent as to a specific kind of LCP. Although one having ordinary skill would have readily chosen an appropriate LCP material, Lambert discloses a LCP with preferred characteristics, i.e., Vectran (see col. 5, lines 40-65). Vectran, like other LCP's are considered to include desired characteristics as recited in the above claims. From this, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized Vectran as the preferred LCP for the flex circuit substrate of Himes et al.

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The motivation would have been: lacking any unobvious or unexpected results, choosing Vectran would have been provided through routine engineering optimization and experimentation, as taught by Lambert. Furthermore, it is noted that it is within the knowledge of a skilled artisan to select known materials on the basis of its suitability for the intended use; See in re Leshin, 125 USPQ 416 (CCPA 1960).

With respect to claim 17 and the use of "heat welding" the conductive element to the LCP, Official Notice is taken that the method of heat welding is notoriously old and well known in this art, and it would have been obvious to have utilized this step in forming the flexible circuit of Himes et al. The motivation would have been: lacking any unobvious or unexpected results, heat welding would have provided a secure and easy step of providing the conductive element on the PCP, as would have been realized by a skilled artisan.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure including US Patents to Onodera et al (5,843,562) and McGinley et al (5,688,146) are cited to show the use of Vectra brand LCP for the flexible circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-F 8am-5:30pm (FF off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.



Brian E. Miller
Primary Examiner
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bem
June 25, 2001